RESEARCH:
Michael is a part of the development of a novel antibacterial compound which has shown efficacy against Methicillin-resistant *Staphylococcus aureus* (MRSA). The compound, trishexylaminomelamine-tris-phenylguanide (THAM-3PhG), has similarities to chlorhexidine, a topical microbicide that has been widely used for 50 years with no known resistance. For this reason it is believed THAM-3PhG may have a similar mechanism of action to chlorhexidine. Specifically, Michael is working toward the discovery of the mechanism of bactericidal action for THAM-3PhG. To better understand this novel compound’s mechanism of action, he has worked to elucidate a THAM-3PhG resistant strain of MRSA (T-MRSA). This T-MRSA strain will then be analyzed to compare to non THAM-3PhG-resistant strains of MRSA that may give insight into the mechanism behind THAM-3PhG’s bactericidal action.

OUTREACH:
For Michael’s outreach, he led a 5-week after-school Science Club for 3rd through 5th graders at Whittier Elementary School. During Science Club, students were taught about the unseen world of microbes. They explored various areas of their school to discover bacteria and learned where most bacteria are found. Each student was also given the opportunity to design his or her own experiment in which bacteria was cultured from an area of interest and the efficacy of a cleaner of the student’s choice was tested against it. For the final day of science club, the students had the opportunity to observe the bacteria they had been growing under microscopes.